

AMENDMENTS TO THE CLAIMS

This listing of claims would replace all prior versions and listings of claims in the application:

1. (Currently Amended) A method performed by an intermediate entity, including a router and a proxy server, for transparently handling communications between a client and a destination, comprising:
 - establishing communication sessions between the client and the intermediate entity and the destination and the intermediate entity;
 - receiving a first packet addressed to the destination by the router from the client including data and a client address corresponding to the client;
 - reading a destination address corresponding to the destination from the first packet;
 - creating and sending a second packet from the router to the proxy server, the second packet including the data, the client address, and a proxy address;
 - determining [[a]] the destination address corresponding to the destination based on the client address included in the second packet;
 - creating a third packet including the data and the destination address corresponding to the destination;
 - sending the third packet to the destination using the destination address corresponding to the destination;
 - receiving a response from the destination including the destination address corresponding to the destination;

determining a client address corresponding to the client based on the destination address corresponding to the destination; and

sending the response to the client using the client address.

2. (Previously Presented) The method of claim 1, further including:

determining if the destination is a first type or second type of destination;

forwarding the first packet to the destination if the destination is the first type of destination; and

performing the steps of determining a destination address and sending the third packet if the destination is the second type of destination.

3. (Previously Presented) The method of claim 1, wherein establishing communication sessions further includes:

sending to the client a connection setup acknowledgment having the destination address in a source field in response to a connection setup acknowledgment received from the destination.

4. (Previously Presented) The method of claim 1, wherein determining a destination address includes accessing a table including information associating the client and the destination addresses; and

wherein determining a client address includes accessing the table including information associating the client and the destination addresses.

5. (Previously Presented) The method of claim 4, wherein accessing the table includes:

using the client address to locate the destination address in the table; and
using the destination address to locate the client address in the table.

6. (Previously Presented) The method of claim 5, wherein the destination address and the client address are stored in the table when the communication sessions are established.

7. (Previously Presented) A method performed by an intermediate entity for transparently handling communications between a client and a destination, comprising:

establishing communication sessions between the client and the intermediate entity and the destination and the intermediate entity;

receiving a first packet from the client including data and a client address corresponding to the client;

reading a destination address from a destination field of the first packet; and

preparing an intermediate communication having a source field, a destination field, and a temporary field, the preparing including:

storing the client address in the source field;

storing the destination address in a temporary field; and

storing an intermediate destination address in the destination field.

8. (Previously Presented) The method of claim 1, further including:
determining whether the first packet includes a connection setup request; and
storing the address of an intermediate destination in a destination field when the
client communication is not a connection setup request.

9. (Original) The method of claim 1, further including:
performing a service at the intermediate entity in response to a service request
from the client.

10. (Previously Presented) The method of claim 9, further including:
preparing a fourth packet for the client based on performance of the service and
including the destination address in a source field of the fourth packet.

11. (Currently Amended) An intermediate entity, including a router and a
proxy, for transparently handling communications between a client and a destination,
comprising:

means for establishing communication sessions between the client and the
intermediate entity and the destination and the intermediate entity;

means for receiving a first packet addressed to the destination by the router from
the client including data and a client address corresponding to the client;

means for reading a destination address corresponding to the destination from
the first packet;

means for creating and sending a second packet from the router to the proxy server, the second packet including the data, the client address, and a proxy address;

means for determining ~~[[a]]~~ the destination address corresponding to the destination based on the client address included in the second packet;

means for creating a third packet including the data and the destination address corresponding to the destination;

means for sending the third packet to the destination using the destination address corresponding to the destination;

means for receiving a response from the destination including the destination address corresponding to the destination;

means for determining a client address corresponding to the client based on the destination address corresponding to the destination; and

means for sending the response to the client using the client address.

12. (Previously Presented) The intermediate entity of claim 11, further comprising:

means for determining if the destination is a first type or second type of destination;

means for forwarding the first packet to the destination if the destination is the first type of destination; and

wherein the means for determining a destination address and sending the third packet perform said functions if the destination is the second type of destination.

13. (Previously Presented) The intermediate entity of claim 11, wherein the means for establishing communication sessions further comprises:

means for sending to the client a connection setup acknowledgment having the destination address in a source field in response to a connection setup acknowledgment received from the destination.

14. (Previously Presented) The intermediate entity of claim 11, wherein the means for determining a destination address comprises means for accessing a table including information associating the client and the destination addresses; and

wherein the means for determining a client address comprises means for accessing the table including information associating the client and the destination addresses.

15. (Previously Presented) The intermediate entity of claim 14, wherein the means for accessing the table comprises:

means for using the client address to locate the destination address in the table;
and

means for using the destination address to locate the client address in the table.

16. (Previously Presented) The intermediate entity of claim 15, wherein the destination address and the client address are stored in the table when the communication sessions are established.

17. (Previously Presented) An intermediate entity for transparently handling communications between a client and a destination, comprising:

means for establishing communication sessions between the client and the intermediate entity and the destination and the intermediate entity;

means for receiving a first packet from the client including data and a client address corresponding to the client;

means for reading a destination address from a destination field of the first packet; and

means for preparing an intermediate communication having a source field, a destination field, and a temporary field, the preparing including:

storing the client address in the source field;

storing the destination address in a temporary field; and

storing an intermediate destination address in the destination field.

18. (Previously Presented) The intermediate entity of claim 11, further comprising:

means for determining whether the first packet includes a connection setup request; and

means for storing the address of an intermediate destination in a destination field when the client communication is not a connection setup request.

19. (Original) The intermediate entity of claim 11, further comprising:

means for performing a service at the intermediate entity in response to a service request from the client.

20. (Previously Presented) The intermediate entity of claim 19, further comprising:

means for preparing a fourth packet for the client based on performance of the service and including the destination address in a source field of the fourth packet.

21. (Currently Amended) An intermediate entity, including a router and a proxy server, for transparently handling communications between a client and a destination, comprising:

a communication session establishing element for establishing communication sessions between the client and the intermediate entity and the destination and the intermediate entity;

a packet receiving element for receiving by the router a first packet addressed to the destination from the client including data and a client address corresponding to the client;

a first packet reading element for reading a destination address corresponding to the destination from the first packet;

a first packet creating element for creating and sending a second packet from the router to the proxy server, the second packet including the data, the client address, and a proxy address;

a destination address determining element for determining ~~[[a]]~~ the destination address corresponding to the destination based on the client address included in the second packet;

a second packet creating element for creating a third packet including the data and the destination address corresponding to the destination;

a packet sending element for sending the third packet to the destination using the destination address corresponding to the destination;

a response receiving element for receiving a response from the destination including the destination address corresponding to the destination;

a client address determining element for determining a client address corresponding to the client based on the destination address corresponding to the destination; and

a response sending element for sending the response to the client using the client address.

22. (Currently Amended) The intermediate entity of claim 21, further comprising:

a determining element for determining if the destination is a first type or second type of destination;

a forwarding element for forwarding the first packet to the destination if the destination is the first type of destination; and

wherein the destination address determining element~~[[,]]~~ and the packet sending element perform said functions if the destination is the second type of destination.

23. (Previously Presented) The intermediate entity of claim 21, wherein the communication session establishing element further comprises:

a connection setup element for sending to the client a connection setup acknowledgment having the destination address in a source field in response to a connection setup acknowledgment received from the destination.

24. (Previously Presented) The intermediate entity of claim 21, wherein the destination address determining element comprises a table accessing element for accessing a table including information associating the client and the destination addresses; and

wherein the client address determining element comprises a table accessing element for accessing the table including information associating the client and the destination addresses.

25. (Previously Presented) The intermediate entity of claim 24, wherein the table accessing element comprises:

a destination address locating element for using the client address to locate the destination address in the table; and

a client address locating element for using the destination address to locate the client address in the table.

26. (Previously Presented) The intermediate entity of claim 25, wherein the destination address and the client address are stored in the table when the communication sessions are established.

27. (Previously Presented) An intermediate entity for transparently handling communications between a client and a destination, comprising:

- a communication session establishing element for establishing communication sessions between the client and the intermediate entity and the destination and the intermediate entity;

- a packet receiving element for receiving a first packet from the client including data and a client address corresponding to the client;

- a reading element for reading a destination address from a destination field of the first packet; and

- an intermediate communication preparation element for preparing an intermediate communication having a source field, a destination field, and a temporary field, the preparing including:

- storing the client address in the source field;

- storing the destination address in a temporary field; and

- storing an intermediate destination address in the destination field.

28. (Previously Presented) The intermediate entity of claim 21, further comprising:

- a connection setup request determining element for determining whether the first packet includes a connection setup request; and

an address storing element for storing the address of an intermediate destination in a destination field when the client communication is not a connection setup request.

29. (Original) The intermediate entity of claim 21, further comprising:

a service performance element for performing a service at the intermediate entity in response to a service request from the client.

30. (Previously Presented) The intermediate entity of claim 29, further comprising:

a client packet preparation element for preparing a fourth packet for the client based on performance of the service and including the destination address in a source field of the fourth packet.

31. (Currently Amended) A computer program product comprising:

a computer usable medium having computer readable code embodied therein for transparently handling communications between a client and a destination by an intermediate entity including a router and a proxy, the computer usable medium comprising:

a module for establishing communication sessions between the client and the intermediate entity and the destination and the intermediate entity;

a module for receiving a first packet addressed to the destination by the router from the client including data and a client address corresponding to the client;

a module for reading a destination address corresponding to the destination from the first packet;

a module for creating and sending a second packet from the router to the proxy server, the second packet including the data, the client address, and a proxy address;

a module for determining [[a]] the destination address corresponding to the destination based on the client address included in the second packet;

a module for creating a third packet including the data and the destination address corresponding to the destination;

a module for sending the third packet to the destination using the destination address corresponding to the destination;

a module for receiving a response from the destination including the destination address corresponding to the destination;

a module for determining a client address corresponding to the client based on the destination address corresponding to the destination; and

a module for sending the response to the client using the client address.

32. (Currently Amended) The computer program product of claim 31, further comprising:

a module for determining if the destination is a first type or second type of destination;

a module for forwarding the first packet to the destination if the destination is the first type of destination; and

wherein the modules for determining a destination address and sending the third packet will perform said functions if the destination ~~[[in]]~~ is the second type of destination.

33. (Previously Presented) The computer program product of claim 31, wherein the module for establishing communication sessions further comprises:
a module for sending to the client a connection setup acknowledgment having the destination address in a source field in response to a connection setup acknowledgment received from the destination.

34. (Previously Presented) The computer program product of claim 31, wherein the module for determining a destination address comprises a module for accessing a table including information associating the client and the destination addresses; and

wherein the module for determining a client address comprises a module for accessing the table including information associating the client and the destination addresses.

35. (Previously Presented) The computer program product of claim 34, wherein the module for accessing the table comprises:
a module for using the client address to locate the destination address in the table; and

a module for using the destination address to locate the client address in the table.

36. (Previously Presented) The computer program product of claim 35, wherein the destination address and the client address are stored in the table when the communication sessions are established.

37. (Previously Presented) A computer program product comprising:
a computer usable medium having computer readable code embodied therein for transparently handling communications between a client and a destination, the computer usable medium comprising:

a module for establishing communication sessions between the client and the intermediate entity and the destination and the intermediate entity;

a module for receiving a first packet from the client including data and a client address corresponding to the client;

a module for reading a destination address from a destination field of the first packet; and

a module for preparing an intermediate communication having a source field, a destination field, and a temporary field, the preparing including:

storing the client address in the source field;

storing the destination address in a temporary field; and

storing an intermediate destination address in the destination field.

38. (Previously Presented) The computer program product of claim 31, further comprising:

a module for determining whether the first packet includes a connection setup request; and

a module for storing the address of an intermediate destination in a destination field when the client communication is not a connection setup request.

39. (Original) The computer program product of claim 31, further comprising:
a module for performing a service at the intermediate entity in response to a service request from the client.

40. (Previously Presented) The computer program product of claim 39, further comprising:
a module for preparing a fourth packet for the client based on performance of the service and including the destination address in a source field of the fourth packet.

41. (Previously Presented) A method for transparently handling communications between a client and a destination, comprising:
sending a client communication addressed to a destination from a client to an intermediate entity;
analyzing the client communication;
reading a destination address from a destination field of the client communication;

preparing an intermediate communication having a source field, a destination field, and a temporary field, the preparing including:

storing a client address in the source field;

storing the destination address in the temporary field; and

storing an intermediate destination address in the destination field;

transmitting a connection setup communication to the destination for establishing a connection between the destination and the intermediate entity;

receiving a connection setup acknowledgement communication from the destination; and

associating the destination address with the client address.

42. (Previously Presented) The method of claim 41, further including:

forwarding the client communication to the destination if the destination is a first type of destination; and

performing the steps of preparing an intermediate communication and transmitting a connection setup communication if the destination is a second type of destination.

43. (Previously Presented) The method of claim 41, further including:

sending to the client a connection setup acknowledgment having the destination address in the source field in response to the connection setup acknowledgment received from the destination.

44. (Previously Presented) The method of claim 41, wherein associating includes:

storing information associating the client address with the destination address.

45. (Previously Presented) The method of claim 44, further including:
creating a communication to the destination using the information associating the client and the destination addresses in response to a request from the client.

46. (Previously Presented) The method of claim 44, further including:
creating a communication to the client using the information associating the client and the destination addresses in response to a communication from the destination.

47. (Cancelled).

48. (Previously Presented) The method of claim 41, further including:
determining whether the client communication is a connection setup request; and
storing the intermediate entity address in a destination field in response to a determination that the client communication is not a connection setup request.

49. (Original) The method of claim 41, further including:
performing a service at the intermediate entity in response to a service request from the client.

50. (Previously Presented) The method of claim 49, further including:
preparing a communication to the client based on performance of the service and including the destination address in the source field.

51. (Previously Presented) A system for transparently handling communications between a client and a destination, comprising:

means for sending a client communication addressed to a destination from a client to an intermediate entity;

means for analyzing the client communication;

means for reading a destination address from a destination field of the client communication;

means for preparing an intermediate communication having a source field, a destination field, and a temporary field, the preparing including:

storing a client address in the source field;

storing the destination address in the temporary field; and

storing an intermediate destination address in the destination field;

means for transmitting a connection setup communication to the destination for establishing a connection between the destination and the intermediate entity;

means for receiving a connection setup acknowledgement communication from the destination; and

means for associating the destination address with the client address.

52. (Previously Presented) The system of claim 51, further comprising:

means for forwarding the client communication to the destination if the destination is a first type of destination; and

wherein the means for preparing an intermediate communication and transmitting a connection setup communication perform said functions if the destination is a second type of destination.

53. (Previously Presented) The system of claim 51, further comprising:

means for sending to the client a connection setup acknowledgment having the destination address in the source field in response to the connection setup acknowledgment received from the destination.

54. (Previously Presented) The system of claim 51, wherein the means for associating comprises:

means for storing information associating the client address with the destination address.

55. (Previously Presented) The system of claim 54, further comprising:

means for creating a communication to the destination using the information associating the client and the destination addresses in response to a request from the client.

56. (Previously Presented) The system entity of claim 54, further comprising:
means for creating a communication to the client using the information
associating the client and the destination addresses in response to a communication
from the destination.

57. (Cancelled).

58. (Previously Presented) The system of claim 51, further comprising:
means for determining whether the client communication is a connection setup
request; and
means for storing the intermediate entity address in a destination field in
response to a determination that the client communication is not a connection setup
request.

59. (Original) The system of claim 51, further comprising:
means for performing a service at the intermediate entity in response to receiving
a service request from the client.

60. (Previously Presented) The system of claim 59, further comprising:
means for preparing a communication to the client based on performance of the
service and including the destination address in the source field.

61. (Previously Presented) A system for transparently handling communications between a client and a destination, comprising:

- a sending element for sending a client communication addressed to a destination from a client to an intermediate entity;
- an analyzing element for analyzing the client communication;
- a reading element for reading a destination address from a destination field of the client communication;
- an intermediate communication preparation element for preparing an intermediate communication having a source field, a destination field, and a temporary field, the preparing including:
 - storing a client address in the source field;
 - storing the destination address in the temporary field; and
 - storing an intermediate destination address in the destination field;
- a transmitting element for transmitting a connection setup communication to the destination for establishing a connection between the destination and the intermediate entity;
- a receiving element for receiving a connection setup acknowledgement communication from the destination; and
- an associating element for associating the destination address with the client address.

62. (Previously Presented) The system of claim 61, further comprising:
a forwarding element for forwarding the client communication to the destination if the destination is a first type of destination; and
wherein the intermediate communication preparation element and the transmitting element perform said functions if the destination is a second type of destination.

63. (Previously Presented) The system of claim 61, further comprising:
a client connection setup acknowledgment element for sending to the client a connection setup acknowledgment having the destination address in the source field in response to the connection setup acknowledgment received from the destination.

64. (Previously Presented) The system of claim 61, wherein the associating element comprises:
a storing element for storing information associating the client address with the destination address.

65. (Previously Presented) The system of claim 64, further comprising:
a destination communication creating element for creating a communication to the destination using the information associating the client and the destination addresses in response to a request from the client.

66. (Previously Presented) The system of claim 64, further comprising:

a client communication creation element for creating a communication to the client using the information associating the client and the destination addresses in response to a communication from the destination.

67. (Cancelled).

68. (Previously Presented) The system of claim 61, further comprising:

a connection setup determining element for determining whether the client communication is a connection setup request; and

a storing element for storing the intermediate entity address in a destination field in response to a determination that the client communication is not a connection setup request .

69. (Original) The system of claim 61, further comprising:

a service element for performing a service at the intermediate entity in response to a service request from the client.

70. (Previously Presented) The system of claim 69, further comprising:

a client communication preparation element for preparing a communication to the client based on performance of the service and including the destination address in the source field.

71. (Previously Presented) A computer program product comprising:

a computer usable medium having computer readable code embodied therein for transparently handling communications between a client and a destination, the computer usable medium comprising:

a module for sending a client communication addressed to a destination from a client to an intermediate entity;

a module for analyzing the client communication;

a module for reading a destination address from a destination field of the client communication;

a module for preparing an intermediate communication having a source field, a destination field, and a temporary field, the preparing including:

storing a client address in the source field;

storing the destination address in the temporary field; and

storing an intermediate destination address in the destination field;

a module for transmitting a connection setup communication to the destination for establishing a connection between the destination and the intermediate entity;

a module for receiving a connection setup acknowledgement communication from the destination; and

a module for associating the destination address with the client address.

72. (Previously Presented) The computer program product of claim 71, further comprising:

a module for forwarding the client communication to the destination if the destination is a first type of destination; and

wherein the modules for preparing an intermediate communication and transmitting a connection setup communication perform said functions if the destination is a second type of destination.

73. (Previously Presented) The computer program product of claim 71, further comprising:

a module for sending to the client a connection setup acknowledgment having the destination address in the source field in response to the connection setup acknowledgment received from the destination.

74. (Previously Presented) The computer program product of claim 71, wherein the module for associating comprises:

a module for storing information associating the client address with the destination address.

75. (Previously Presented) The computer program product of claim 74, further comprising:

a module for creating a communication to the destination using the information associating the client and the destination addresses in response to a request from the client.

76. (Previously Presented) The computer program product of claim 74, further comprising:

a module for creating a communication to the client using the information associating the client and the destination addresses in response to a communication from the destination.

77. (Cancelled).

78. (Previously Presented) The computer program product of claim 71, further comprising:

a module for determining whether the client communication is a connection setup request; and

a module for storing the intermediate entity address in a destination field in response to a determination that the client communication is not a connection setup request.

79. (Original) The computer program product of claim 71, further comprising:

a module for performing a service at the intermediate entity in response to a service request from the client.

80. (Previously Presented) The computer program product of claim 79,
further comprising:
a module for preparing a communication to the client based on performance of
the service and including the destination address in the source field.